

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/016499

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G04B1/14 G04B17/06 F16F1/10 C22C14/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G04B F16F C22C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 1 151 350 A (USINE GENEVOISE DE DEGROSSISSAGE D'OR) 29 January 1958 (1958-01-29)	1-7, 16-19
Y	page 3, column 1, line 25 - column 2, line 41	10
A		8,9, 11-15, 21-23
Y	----- EP 1 039 352 A (MONTRES ROLEX SA; MANUFACTURE DES MONTRES ROLEX S.A; ROLEX SA) 27 September 2000 (2000-09-27)	10
A	the whole document . ----- -/-	1-9, 11-23

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

17 June 2005

Date of mailing of the international search report

21. 09. 2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Burns, M

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/016499

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CH 693 516 A5 (EXIDEL S.A) 15 September 2003 (2003-09-15) abstract figure 1	20
A	----- WO 03/052155 A (ATI PROPERTIES, INC; MARQUARDT, BRIAN, J) 26 June 2003 (2003-06-26) page 5, line 21 - page 7, line 15 table 1 table 2	1-23
A	----- PATENT ABSTRACTS OF JAPAN vol. 1997, no. 05, 30 May 1997 (1997-05-30) -& JP 09 013136 A (SEIKO INSTR INC), 14 January 1997 (1997-01-14) abstract -----	1-23

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP2004/016499

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-23

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-23

A timepiece comprising:  
a time display to display time information; and  
a driving power source driving said time display and having  
a first and second spring including a titanium alloy  
containing one or more vanadium group (Group Va) elements  
with an average Young's modulus of 100GPa or less and a  
tensile strength of 1000MPa or greater.

---

2. claims: 24-27

A timepiece comprising:  
A time display to display time information; and  
a power source driving said time display and having a  
balance staff, a balance wheel being fixed to said balance  
stem, a roller with jewel and stud ball, a hairspring having  
an inner end being fixed to said stud ball, and a stud  
support being fixed to an outer end of said hairspring, said  
hairspring including a titanium alloy containing one or more  
vanadium group (Group Va) elements, with an average Young's  
modulus of 100 GPa or less and a tensile strength of 1000  
MPa or greater.

---

3. claims: 28-31

A timepiece comprising: a time display to display time  
information; and  
a power source driving said time display and having a quartz  
oscillator, a ground plate, and a spring fixing said quartz  
oscillator to said ground plate, said spring including of a  
titanium alloy containing one or more vanadium group (Group  
Va) elements, with an average Young's modulus of 100 GPa or  
less and tensile strength of 1000 MPa or greater.

---

## Information on patent family members

International Application No

PCT/JP2004/016499

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 1151350	A	29-01-1958	NONE	
EP 1039352	A	27-09-2000	CN 1268682 A	04-10-2000
			DE 69911913 D1	13-11-2003
			DE 69911913 T2	09-09-2004
			HK 1027636 A1	16-04-2004
			JP 2000321371 A	24-11-2000
			SG 84578 A1	20-11-2001
			TW 430756 B	21-04-2001
CH 693516	A5	15-09-2003	NONE	
WO 03052155	A	26-06-2003	AU 2002322053 A1	30-06-2003
			BG 108742 A	31-03-2005
			BR 0214771 A	14-12-2004
			CA 2468263 A1	26-06-2003
			CN 1602369 A	30-03-2005
			EP 1466028 A1	13-10-2004
			TW 593706 B	21-06-2004
			US 2003168138 A1	11-09-2003
JP 09013136	A	14-01-1997	JP 3041585 B2	15-05-2000